A Novel Approach to Sample for River Water Quality in the Fraser Estuary

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In March 2004, bi-weekly sampling commenced in the Fraser River estuary to determine the water quality of the fresh water entering the estuary. Discrete and composite samples were collected from the Main Arm and North Arm of the Fraser River in a vertical depth profile. The tidal effects of marine water entering the estuary from the Strait of Georgia were successfully used to predict sampling dates and times to ensure only fresh water was sampled even during the winter low flow period. Existing equipment were modified to reduce the potential of sample contamination while sampling from a small boat. Water quality samples were collected and analysed for bacteriological, nutrients and major ions. Real time measurements of depth, temperature, salinity, conductivity and pH were collected using an in situ multi-parameter probe. Preliminary results indicate that the fresh water quality of the Fraser River can be measured successfully within the estuary.